

REMARKS

Claims 1-34 are pending in the present application. Claims 1, 15, 22 and 32 are the independent claims. In the Official Action, dated April 21, 2004, claims 1-13 and 15-21 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent No. 6,073,128 (Pongracz et al.) in view of U.S. Patent No. 6,647,399 (Zaremba) and further in view of U.S. Patent No. 6,145,088 (Stevens). Claim 14 was rejected under 35 U.S.C. § 103(a) over Pongracz et al. in view of Zaremba, further in view of Stevens, and additionally further in view of U.S. Patent No. 6,038,379 (Fletcher et al.). Claims 22-30, 32 and 34 were rejected under 35 U.S.C. § 103(a) over Zaremba in view of Stevens. Lastly, claims 31 and 33 were rejected under 35 U.S.C. § 103(a) over Zaremba in view of Stevens, and further in view of Pongracz et al.

The outstanding rejections to the claims are respectfully traversed.

Rejection of Claims 1-34 under 35 U.S.C. § 103(a): Independent claims 1 and 15

As mentioned above, claims 1 and 15 are two of the four independent claims.

Claim 1, for example, recites the following:

A method for generating backup files in a computer system, comprising:
generating a full backup file corresponding to a first time for a set of objects in the computer system;
generating at least one incremental file for said set of objects after said first time, wherein each of said at least one incremental file is associated with the set of objects;
identifying *a target object within said set of objects* for the generation of cumulative backup files; and
generating at least one cumulative backup file corresponding to a second time, after said first time, *for said target object*, wherein said generating of said at least one cumulative backup file is performed off-line.

(emphasis added). In relevant part, claim 1 above recites “a target object within ... [a] set of objects” and the “generating [of] at least one cumulative backup file ... for said target object.” Put another way, for any given “target object” identified from a “set of objects,” “at least one cumulative backup file” is “generated.” *Id.*

The Application explains why this limitation is, at least in part, important to the claimed invention:

Figure 4 is an illustration of the co-location of storage blocks of a target object to create a cumulative efficient backup object. It should be noted that backup, incremental and cumulative files are stored in memory blocks of a storage component 12 wherever located in the network. Accordingly, since some changes during a time interval may be more sweeping than for other time intervals, more or less blocks B1, B2, B3, etc. will be implicated. Thus, in the example of Figure 4, a full backup file F1 is stored across eight memory blocks F1_B1 through F1_B8. The first incremental file F1_I1 at t2 is stored in one block F1_I1_B1, the second incremental file F1_I2 at t3 is stored across three blocks F1_I2_B1, F1_I2_B2 and F1_I2_B3, and so on. In accordance with the present invention, for a given target object, *a cumulative file at a particular time may be created so that resource intensive searching through incremental files for the data necessary to restore a target object can be avoided at the time of restore, thereby significantly reducing the overall time needed to restore a target object from the time of its failure or corruption.*

(emphasis added) (p. 10, ll. 5-17).

In the Office Action, in addressing the claim 1 limitations of “identifying a target object within said set of objects for the *generation* of cumulative backup files” (emphasis added) and “*generating* at least one cumulative backup file corresponding to a second time, after said first time, for said target object...” (emphasis added), the Examiner cites col. 5, ll. 60-66 and col. 3, ll. 53-64, and col. 1, ll 53-61, respectively, of Pongracz (Office Action, p. 3). Before specifically addressing each of these passages, the Applicants bring the Examiner’s attention to the title of the Pongracz reference: “Method and Apparatus For Identifying Files Used to *Restore* a File” (Title) (emphasis added). In short, Pongracz is not concerned about *generating* backup information, but merely *restoring* information that is already backed up. As such, Pongracz does not disclose any ways to generate backup information, but merely assumes that information is already backed up and proposes ways to restore such backed up information.

Turning now to the specific passages cited by the Examiner, in col. 1. ll. 53-61, the notion or idea of a “cumulative incremental backup” is introduced. In fact, it is stated that such a “cumulative incremental backup” “stores” data that has changed since the last full backup or datafile copy. But no explanation is given about *how* such “storing” is to be performed—and understandably so, since Pongracz is not concerned about “storing” or

“generating” of backup data, but rather with the backend process of “*re*-storing” information that has been already stored.

The same holds true for the other cited passages. Col. 3, ll. 53-64 merely states that “file records … may be stored in a restore list stack….” But *how* is this storing process to be accomplished? Pongracz is silent on this point because the point of Pongracz is to *re*-store backed up data not to store it in the first place. Storing is already assumed in Pongracz. Likewise, col. 5, ll. 60-66 is completely silent on *how* backed up data is to be stored. This passage merely speaks to the *re*-storing process.

Compare now the limitations of claim 1 that recite: “*identifying a target object within* said *set of objects* for the *generation* of cumulative backup files” (emphasis added) and “*generating* at least one cumulative backup file corresponding to a second time, after said first time, *for said target object…*” (emphasis added). Thus, claim 1 clearly specifies *how* cumulative backup files are to be *generated*. First, “identify” a “target object” “within” a “set of objects” and then “generate” a “cumulative backup file” “for said target object.” Pongracz discloses nothing of the sort, and the Examiner’s cited passages (col. 5, ll. 60-66 and col. 3, ll. 53-64, and col. 1, ll 53-61) are not relevant to the recited claims.

Zaremba was cited by the Examiner for disclosing a method for data backup and recovery including the backup for a set of objects and restore the file volume or version (Office Action, p. 4). Specifically, the Examiner cited col. 4, ll. 13-67 of Zaremba. However, this passage speaks to “*naming convention[s]* for … backup database sets” (col. 4, ll. 14-15) (emphasis added), not ways to generate backup database sets in the first place. Importantly, the Applicants note that Zaremba is not cited by the Examiner as addressing these particular limitations in claim 1, rather it is cited as allegedly disclosing the backup for a set of objects (Office Action, p.4).

Stevens was cited for reasons relating to off-line operation, and Fletcher et al. was cited for reasons relating to storage block mappings and formatting, but neither Stevens nor Fletcher et al. cure the above-identified deficiency of Zaremba and Pongracz et al. with respect to Applicant’s claimed invention. Thus, none of Pongracz et al., Zaremba, Stevens, or Fletcher et al., taken alone or in combination, teach or suggest identifying a target object

within the set of objects for the generation of cumulative backup file(s) and generating those cumulative backup file(s) for the target object off-line, as recited in claim 1.

Similar limitations to those of claim 1 are recited in claim 15. Claims 2-14 and 16-21 depend from claims 1 and 15, either directly or indirectly, and are believed allowable for the same reasons. Withdrawal of the rejection to claims 1-21 under 35 U.S.C. § 103(a) is respectfully requested.

Rejection of Claims 1-34 under 35 U.S.C. § 103(a): Independent claims 22 and 32

As stated above, claims 22-30, 32 and 34 were rejected under 35 U.S.C. § 103(a) over Zaremba in view of Stevens.

For example, claim 22 recites the following:

A computer system, comprising:

 a plurality of servers having at least one connection to a communications network; and

 a plurality of storage components for the storage of backup information for a plurality of target objects in the form of full, incremental and cumulative backup information, wherein the incremental and cumulative backup information is associated with the collection of said plurality of target objects;

 wherein said full backup information is generated at a first time and said cumulative backup information is generated at a second time, wherein said storage components are accessible over said at least one connection via said plurality of servers, wherein said cumulative backup information is generated off-line and wherein said plurality of target objects may be efficiently reconstructed to said second time associated with said cumulative backup information.”

(emphasis added). Thus, claim 22 recites “target objects in the form of full, incremental and cumulative backup information ... wherein ... full backup information is **generated** at a first time and said cumulative backup information is **generated** at a second time.”

In contrast, Stevens discloses an “Apparatus and Method For Remote Data **Recovery**” (Title) (emphasis added). Specifically, Stevens is concerned with recovering (i.e. *re*-storing) off line data, and not “**generating**” “backup information” off-line as per claim 22. The passage cited by the Examiner to fill the gap left by Zaremba, which “does not disclose that the backup information wherein the backup can be performed off-line” (Office Action, p. 7), namely col. 1, ll. 49-56), falls short of disclosing “**generating**” “backup information.” Indeed, what the passage speaks to is the “**restoration** from off-line backup” (col. 1, l. 51)

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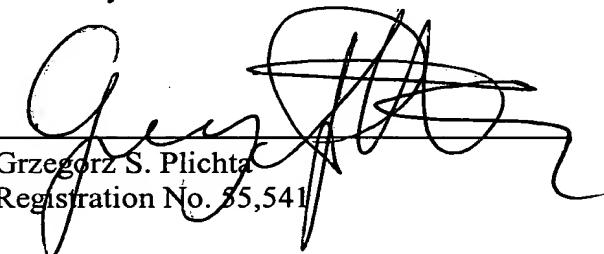
and “data losses which are theoretically *restorable* from off-line backup” (col. 1, ll. 54-55) – which doesn’t mean the information was “*generated*” off-line. There is a difference between generating information off-line and storing off-line information that was generated (perhaps on-line). In the latter case, such stored information which is deemed “off-line” backup information because it is stored off-line. Once it is stored, it may then be restored.

Accordingly, none of the art of record is believed to teach or suggest “target objects in the form of full, incremental and cumulative backup information … wherein … full backup information is *generated* at a first time and said cumulative backup information is *generated* at a second time” (claim 22). Similar reasoning holds true for independent claim 32. Claims 23-31 and 33-34 depend from claims 22 and 32, either directly or indirectly, and are believed allowable for the same reasons. Withdrawal of the rejection to claims 22-34 under 35 U.S.C. § 103(a) is respectfully requested.

CONCLUSION

Applicant believes that the present Amendment is responsive to each of the points raised by the Examiner in the Office Action, and submits that Claims 1-34 of the application are in condition for allowance. Favorable consideration and passage to issue of the application at the Examiner’s earliest convenience is earnestly solicited.

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